
LD 45: Background Signaling and Switching Diagnostic

This program performs network continuity tests and outputs detected problems via BSD messages.

The Manual Continuity Test (MCT) allows you to isolate intermittent faulty points reported by the Background Continuity Test (BCT). For example, BCT reports faults between A, B, and C. Run the MCT between A and B, then between B and C to determine how often it fails.

When run in background, LD 45 tests the following on all enabled network loops:

- the continuity of the speech path between each network card and its associated PE shelves is tested
- the continuity of the speech path between all network card is tested
- non functioning paths between network cards are identified

Note: When running in background, only new faults detected are output.

For systems running Release 15 and later, memory and signaling tests are only performed in LD 30. If LD 45 is included in background or midnight routines it is recommended that LD 30 also be included. By including LD 30, bad memory areas will be flagged before the continuity tests of LD 45 which will improve fault isolation.

On Option 11 systems, this Overlay program is not available. Use Overlay program 30 (LD 30) to perform signaling tests on these systems.

Using the manual extended continuity (XCON) command

The XCON command is used to test various communication paths on or between NT8D04 Network, NT8D01 Controller, Multipurpose ISDN Signaling Processor (MISP), S/T-Interface Line (SILC) and U-Interface Line (UILC) cards. There are 10 paths XCON may test. Table 10 and Table 11 show 8 of these paths. Only 1 XCON test at a time can be run on a superloop.

To begin a manual extended continuity test, enter one of the following:

- XCON 0 = perform test once and output results
- XCON H hhh = repeat test for hhh hours (hhh = 1-255)
- XCON M mmm = repeat test for mmm minutes (mmm = 1-255)
- XCON S sss = repeat test for sss seconds (sss = 1-255)

After you enter a XCON command, you are prompted for a combination of the values listed below. The responses to these prompts determine the test performed.

Prompt — Response — Comment

DSLT — xx — Timeslot (2-31, 34-63, 66-95, 98-127) for Network Card associated with detector Controller.

GSLT — xx — Timeslot (2-31, 34-63, 66-95, 98-127) for Network Card associated with generator Controller.

JUNC — x — Junctor number (0-7).

LBTN — l s c u — Terminal Number (loop, shelf, card, unit) to be loopback point.

LBTY— N/P — Loopback address: N = Network Card, P = Controller or terminal.

Note: When using XCON Test 9 for ISDN BRI, the possible responses for LBTY are 3 or 4. 3 indicated the test will take place with the DSL enabled; 4 performs the test with the DSL disabled.

PATT — x — Test pattern number (0-7). Signal sent by the generator to the detector. You should run a test several times with varying patterns.

SLOT — xx — Timeslot (2-31, 34-63, 66-95, 98-127). Enter return (<cr>) to select a random timeslot.

SUPL — l — Superloop number (0-156, in multiples of 4).

TAG — x — Tag number (1-15) returned by the system. Tag number 0 is used for one-shot tests (XCON 0).

TEST — x — Test case number (1-8).

TN — l s c u — Controller or terminal (loop, shelf, card, unit) to be the detector. For Controller, enter any valid TN on Controller's shelf. For special loopback channel enter: l s 99 0.

TYPD — N/P — Pattern detector: N = Network Card, P = Controller.

TYPG — N/P — Pattern generator: N = Network Card, P = Controller.

Figure 10
XCON test paths

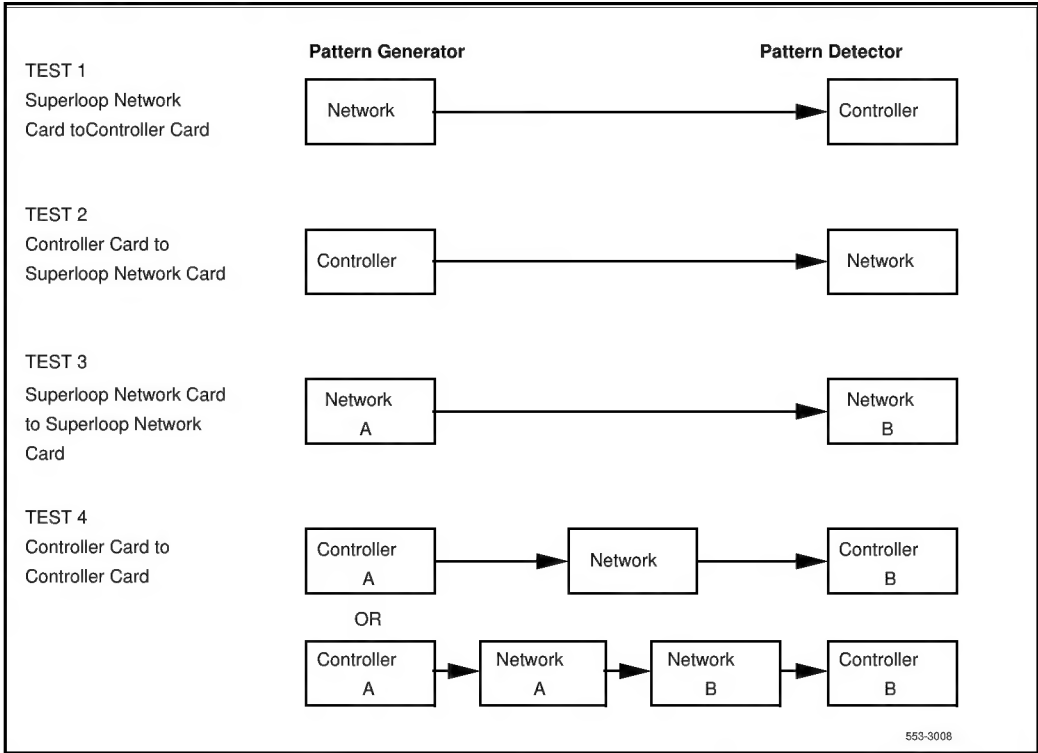
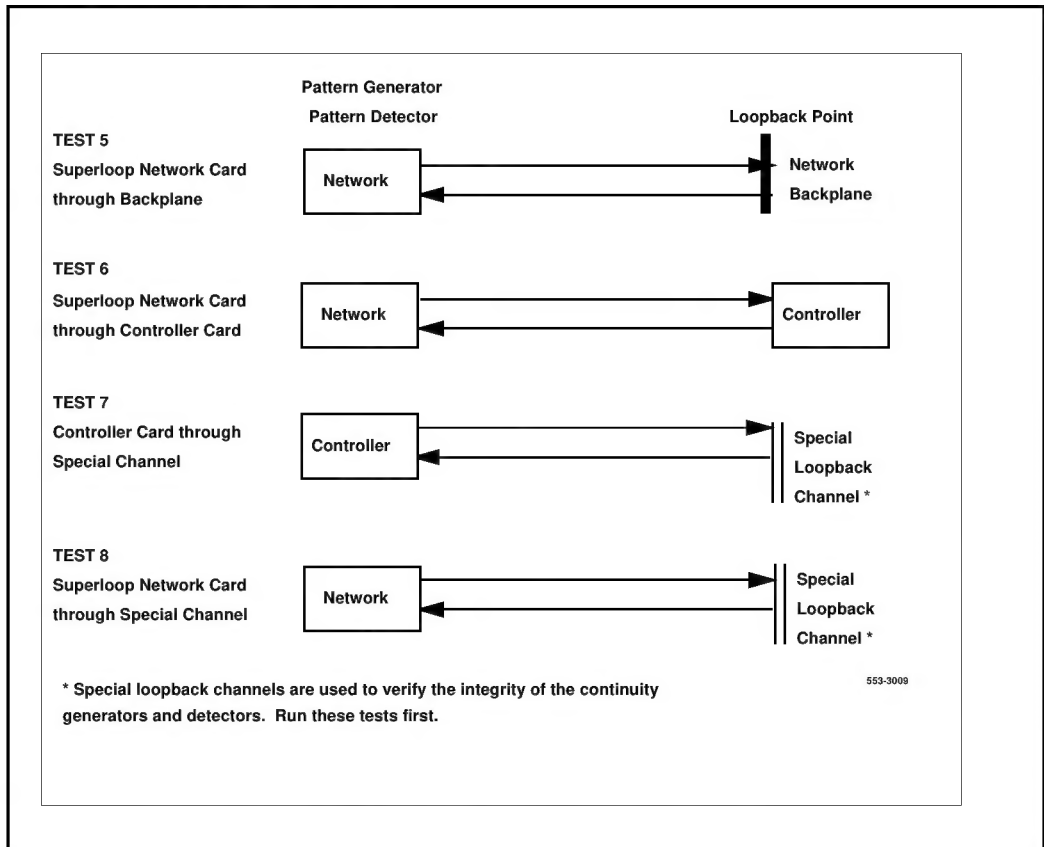


Figure 11
XCON test paths (continued)



Basic commands

NSIG	Perform the network memory and continuity tests (Release 14 and earlier)
TEST (loop)	Perform a complete continuity test for one or all loops. Unplugged cards are not tested for continuity.
XCON 0	Perform Extended Continuity test once and output results. User will be prompted for TEST number. See "XCON sub-prompts" on page 239.
XCON H hhh	Repeat Extended Continuity test for hhh hours (hhh = 1-255). User will be prompted for TEST number. See "XCON sub-prompts" on page 239.
XCON M mmm	Repeat Extended Continuity test for mm minutes (mm = 1-255). User will be prompted for TEST number. See "XCON sub-prompts" on page 239.
XCON S sss	Repeat Extended Continuity test for ss seconds (ss = 1-255). User will be prompted for TEST number. See "XCON sub-prompts" on page 239.
XINF	Display the tag numbers of all running and completed continuity tests
XSTA x	Get the status of manual continuity test with TAG = x
XSTP x	Stop manual continuity test with TAG = x

XCON sub-prompts

TEST = 1			
Test Path	Network Card to Controller. This test uses the Network Card (NT8D04) as a pattern generator and the Controller (NT8D01) as the detector.		Pack/Rel xpe-15
Prompt	Response	Description	
TEST	1	Network Card to Controller	
TYPE	SL	Test superloop (SL)	
PATT	x	Pattern (0-7)	
TYPG	N	Network Card is generator	
SUPL	loop	0-156 in multiples of 4	
SLOT	xxx	Timeslot 2-31, 34-63, 66-95, 98-127. SLOT appears if Remote IPE package 286 is not equipped.	
TYPD	P	Controller is detector E1 Carrier = Timesot : 0 = 5-31 ; 1 = 37-63 ; 2 = 69-95 T-1 Carrier = Timesot : 0 = 5-25 ; 1 = 37-57 ; 2 = 69-89	
TN	I s c u	Valid TN on the Controller	
TAG	xx	Tag number (1-15) assigned by the system	

TEST = 2			
Test Path	Controller to Network Card. This test uses the Controller (NT8D01) as a pattern generator and the Network Card (NT8D04) as the detector.		Pack/Rel xpe-15
Prompt	Response	Description	
TEST	2	Controller to Network Card	
PATT	x	Pattern (0-7)	
TYPG	P	Controller is generator	
TN	I s c u	Valid TN on the Controller	
TYPD	N	Network Card is detector	
SUPL	loop	0-156 in multiples of 4	
SLOT	xxx	Timeslot 2-31, 34-63, 66-95, 98-127	
TAG	xx	Tag number (1-15) assigned by the system	

TEST = 3

Test Path	Network Card to different Network Card. This test uses the Network Card (NT8D04) as a pattern generator and another Network Card as the detector.		Pack/Rel xpe-15
Prompt	Response	Description	
TEST	3	Network Card to different Network Card	
PATT	x	Pattern (0-7)	
TYPG	N	Network Card is generator	
SUPL	loop	0-156 in multiples of 4	
SLOT	xxx	Timeslot 2-31, 34-63, 66-95, 98-127	
TYPD	N	Network Card is detector	
SUPL	loop	0-156 in multiples of 4	
SLOT	xxx	Timeslot 2-31, 34-63, 66-95, 98-127	
JUNC	x	Junctor if Network cards in different groups	
TAG	xx	Tag number (1-15) assigned by the system	

TEST = 4

Test Path	Controller to different Controller. This test uses a Controller (NT8D01) as a pattern generator and another Controller as a detector. The pattern is sent through one or two Network Cards (NT8D04).		Pack/Rel xpe-15
Prompt	Response	Description	
TEST	4	Controller to different Controller	
PATT	x	Pattern (0-7)	
TYPG	P	Controller is generator	
TN	I s c u	Valid TN on the Controller	
TYPD	P	Controller is detector	
TN	I s c u	Valid TN on the Controller	
GSLT	xxx	Timeslot 2-31, 34-63, 66-95, 98-127 on generator Network Card	
DSL T	xxx	Timeslot 2-31, 34-63, 66-95, 98-127 on detector Network Card	
JUNC	x	Junctor if Network cards in different groups	
TAG	xx	Tag number (1-15) assigned by the system	

TEST = 5

Test Path	Network Card to Network Card (loop back at backplane). This test uses the Network Card (NT8D04) as a pattern generator and detector. The pattern is sent to the network backplane and back.		Pack/Rel xpe-15
Prompt	Response	Description	
TEST	5	Network Card to Network Card (loop back at backplane)	
PATT	x	pattern (0-7)	
TYPG	N	Network Card is generator	
SUPL	loop	0-156 in multiples of 4	
SLOT	xxx	timeslot 2-31, 34-63, 66-95, 98-127	
TYPD	N	Network Card is detector	
SUPL	loop	0-156 in multiples of 4	
SLOT	xxx	timeslot 2-31, 34-63, 66-95, 98-127	
LBTY	N	through network backplane	
TAG	xx	tag number (1-15) assigned by the system	

TEST = 6

Test Path	Network Card to Network Card (loop back through Controller). This test uses the Network Card (NT8D04) as a pattern generator and detector. The pattern is looped back through a Controller (NT8D01).		Pack/Rel xpe-15
Prompt	Response	Description	
TEST	6	Network Card to Network Card (loop back through Controller)	
PATT	x	Pattern (0-7)	
TYPG	N	Network Card is generator	
SUPL	loop	0-156 in multiples of 4	
SLOT	xxx	Timeslot 2-31, 34-63, 66-95, 98-127	
TYPD	N	Network Card is detector	
SUPL	loop	0-156 in multiples of 4	
SLOT	xxx	Timeslot 2-31, 34-63, 66-95, 98-127	
LBTY	P	Through Controller	
LBTN	I s 99 0	Special Controller loop back channel	
TAG	xx	Tag number (1-15) assigned by the system	

TEST = 7

Test Path	Controller to Controller (special loop back channel). This test uses the Controller (NT8D01) as a pattern generator and detector. The pattern is looped back through a special loop back channel.		Pack/Rel xpe-15
Prompt	Response	Description	
TEST	7	Controller to Controller (special loop back channel)	
PATT	x	Pattern (0-7)	
TYPG	P	Controller is generator	
TN	1 s 99 0	Special Controller loop back channel	
TAG	xx	Tag number (1-15) assigned by the system	

TEST = 8

Test Path	Network Card to Network Card (special loop back channel). This test uses the Network Card (NT8D04) as a pattern generator and detector. The pattern is looped back through a special channel which is specified by timeslot 128.		Pack/Rel xpe-15
Prompt	Response	Description	
TEST	8	Network Card to Network Card (special loop back channel)	
PATT	x	Pattern (0-7)	
TYPG	N	Network Card is generator	
SUPL	loop	0-156 in multiples of 4	
SLOT	128	Special Network loop back channel	
TAG	xx	Tag number (1-15) assigned by the system	

TEST = 9

Test Path	Loop back test on Digital Subscriber Loop. This test uses the MISP as a pattern generator and detector. The pattern goes through the Network and Controller Card and is looped back at a single DSL. Both B- and D-channels are looped back.		Pack/Rel bri-18
Prompt	Response	Description	
TEST	9	Loop back test on Digital Subscriber Loop	
PATT	x	Pattern (0-7)	
TYPG	N	Network Card is generator	
SUPL	loop	0-156 in multiples of 4	
SLOT	128	Special Network loop back channel	
LBTY	3	DSL is requested for loop back	
LBTN	l s c d	Address of DSL	
TAG	xx	Tag number (1-15) assigned by the system	

TEST = 10

Test Path	Loop back test on BRI line card. This test uses the MISP as a pattern generator and detector. The pattern goes through the Network and Controller Card and is looped back at the line card level (i.e., bus loop back). Both B- and D-channels are looped back.		Pack/Rel bri-18
Prompt	Response	Description	
TEST	10	Loop back test on BRI line card	
PATT	x	Pattern (0-7)	
TYPG	5	MISP is generator	
SUPL	loop	0-156 in multiples of 4	
SLOT	128	Special Network loop back channel	
LBTY	4	loop back at line card	
LBTN	l s c d	Address of DSL	
TAG	xx	Tag number (1-15) assigned by the system	

Alphabetical list of commands

Command	Description	Pack/Rel
NSIG	Perform the network memory and continuity tests (Release 14 and earlier). No signaling test is done. All faults detected are reported. If no faults are detected, "OK" is output. This command is not available in Release 15 and later.	basic-1
TEST (loop)	Perform a complete continuity test for one or all loops. Performs a complete test and reports all faults detected (even if they have been previously reported).	basic-1
XCON 0	Perform Extended Continuity test once, then output results. After entering this command, you will then be able to select and conduct 1 of 10 possible XCON tests. These XCON tests begin on page 239.	xpe-15
XCON H hhh	Perform Extended Continuity test for hhh (1-255) hours, then output results. After entering this command, you will then be able to select and conduct 1 of 10 possible XCON tests. These XCON tests begin on page 239.	xpe-15
XCON M mmm	Perform Extended Continuity test for mmm (1-255) minutes, then output results. After entering this command, you will then be able to select and conduct 1 of 10 possible XCON tests. These XCON tests begin on page 239.	xpe-15
XCON S sss	Perform Extended Continuity test for sss (1-255) seconds, then output results. After entering this command, you will then be able to select and conduct 1 of 10 possible XCON tests. These XCON tests begin on page 239.	xpe-15
XINF	Display the tag numbers of all running and completed tests. The output format (where T# = Tag Number) is: RUNNING: T# T# T# T# DONE: T# T# T# T# SUSPENDED: T# T# T# T# FREE: x x (number of free tags available [0-15])	xpe-15

XSTA x	Get the status of manual continuity test with TAG = x. Individual tests are identified by the tag number the system generates when you complete a sequence of test prompts. See also the XINF and XSTP commands. The test status provides the following format information: PATT x Pattern number GENERATE: Generator information follows: TYPG N/P Network or Controller as pattern generator SUPL x Superloop number or TN on Controller SLOT x Timeslot DETECT: Detector information follows: TYPD N/P Network or Controller as pattern detector SUPL x Superloop number or TN on Controller SLOT x Timeslot RESULTS: Results follow: TESTS COMPLETED: xxxxxxxx TESTS FAILED: xxxxxxxx	xpe-15
XSTP x	Stop manual continuity test with TAG = x. Individual tests are identified by the tag numbers. The XSTP command outputs the test status. See also XINF and XSTA commands.	xpe-15

Alphabetical list of XCON sub-prompts

Prompt	Response	Description
DSLT	xxx	Timeslot (2-31, 34-63, 66-95, 98-127) for Network Card associated with detector Controller
GSLT	xxx	Timeslot (2-31, 34-63, 66-95, 98-127) for Network Card associated with generator Controller
JUNC	x	Junctor number (0-7)
LBTN	l s c u o r l s c d	Loop back Controller or Terminal Number. Where: l = loop, s = shelf, c = card, u = unit, and d = Digital Subscriber Loop (DSL).
LBTY	y	Loop back Type (3, 4, N, or P). Where: • 3 = Digital Subscriber Loop • 4 = Line Card • N = Network Card • P = Controller or Terminal
PATT	x	Test pattern (0-7) sent by the generator to the detector
SLOT	xxx	Timeslot (2-31, 34-63, 66-95, 98-127). Enter return (<cr>) to select a random timeslot. For special loop back slot enter: 128.
SUPL	loop	Superloop number (0-156, in multiples of 4)
TAG	xx	Tag number (0-15) returned by the system. Tag number 0 is used for one-shot tests (XCON 0).
TEST	xx	XCON test path (1-10). Where: • 1 = Network Card to Controller • 2 = Controller to Network Card • 3 = Network Card to different Network Card • 4 = Controller to different Controller • 5 = Network Card to Network Card (loop back at backplane)

		• 6 = Network Card to Network Card (loop back through Controller) • 7 = Controller to Controller (special loop back channel) • 8 = Network Card to Network Card (special loop back channel) • 9 = Loop back test on Digital Subscriber loop • 10 = Loop back test on BRI line card
TN	I s c u	Controller or terminal (loop, shelf, card, unit) to be the detector. For Controller, enter any valid TN on Controller's shelf. For special loop back channel enter: I s 99 0.
TYPD	y	Type of Pattern Detector (N or P). Where: N = Network Card and P = Controller.
TPPG	y	Type of Pattern Generator (5, N, or P). Where: • 5 = Multipurpose ISDN Signaling Processor • N = Network Card • P = Controller
